EXHIBIT D

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T-673 P.003

F-887

IN THE UNITED STATES DISTRICT COURT FOR THE DISTRICT OF MASSACHUSETTS

SKYLINE SOFTWARE SYSTEMS, INC.,

Plaintiff.

CIVIL ACTION NO. 04-11129 DPW

٧.

KEYHOLE, INC., and GOOGLE INC.

Defendants.

DEFENDANTS' SUPPLEMENTAL OBJECTIONS AND RESPONSES TO PLAINTIFF'S FIRST SET OF INTERROGATORIES (No. 10)

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Of Counsel

Defendants' Supplemental Response to Interrogatory No. 10 Case No. 04 -11129 DPW

Pursuant to Rules 26 and 33 of the Federal Rules of Civil Procedure, Defendants Keyhole, Inc. and Google Inc. hereby provide supplemental objections and responses to Plaintiff's First Set of Interrogatories to Defendant Keyhole, Inc. (No. 10) as follows:

GENERAL OBJECTIONS

Defendants incorporate herein by reference the General Objections in Keyhole, Inc.'s Objections and Responses to Plaintiff's First Set of Interrogatories.

SPECIFIC OBJECTIONS AND RESPONSES

INTERROGATORY NO. 1:

State in full and complete detail what you contend is the proper claim construction for the terms and/or phrases in the '189 Patent which you contend are at issue for the purpose of claim construction; and the basis for your contentions.

SUPPLEMENTAL RESPONSE TO INTERROGATORY NO. 1:

Defendants incorporate their General Objections herein by reference. Defendants further incorporate the specific objections to Interrogatory No. 10 found in Keyhole, Inc.'s Objections and Responses to Plaintiff's First Set of Interrogatories. Keyhole further objects to this interrogatory as premature because the time for expert discovery is not yet at hand.

Nevertheless, to promote the orderly progress of discovery and in light of the Court's phasing of discovery to proceed with claim construction at this time, Keyhole provides the following preliminary constructions, reserving the right to supplement and/or amend in light of additional discovery, including after the opportunity to consult with experts and/or conduct expert discovery. Keyhole further objects to this interrogatory to the extent it seeks information protected by any privilege, including the attorney-client privilege, work product doctrine, common interest privilege, or any other applicable privilege, immunity, or restriction on discovery.

Subject to and without waiving any objections, Keyhole responds as follows:

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· Claim · Proper Construction I. A method of providing terrain - the earth's surface as a variation from mean sea level data blocks describing threedata block -- a data block is a real life image of a terrain area, and is composed of dimensional terrain to a individual sub-blocks of pixels, each pixel represented by a color and elevation renderer, the data blocks attribute; each data block has one particular resolution and is transmitted to or processed belonging to a hierarchical by the renderer as a single unit. E.g. '189 patent, col. 8:15-9:27. structure which includes blocks at a plurality of data blocks belonging to a hierarchical structure - data blocks organized into different resolution levels. multiple levels of resolution, whereby each level contains data blocks at the same the method comprising: resolution, and each successive level contains data blocks of a higher resolution than those in the preceding level. E.g. '189 patent, col. 9:17-20; Figs. 2-3, 9; claim 2; '189 Patent File History, Feb. 27, 2002 Amendment. resolution level - the amount of detail per unit area. E.g. '189 patent, col. 3:6-9; col. 8:59-67. receiving from the renderer renderer - A software object that (1) determines the coordinates of terrain data one or more coordinates required to draw a view on a display and requests the corresponding data blocks of in the terrain along with terrain data at a specified resolution level; (2) receives the requested data blocks indication of a respective corresponding to the provided coordinates; and (3) uses the received data blocks to draw resolution level the view on the display. E.g. '189 patent, col. 3:58-60; col. 11:19-30; col. 12:58-13:2; col. 13:10-17. coordinates in the terrain - a pair of coordinates, such as latitude and longitude or x and y coordinates, of a particular location in the terrain. indication of a respective resolution level – data specifying the amount of detail per unit area corresponding to a level of resolution in the hierarchical structure of data blocks. receiving from the renderer one or more coordinates in the terrain along with indication of a respective resolution level - a software object other than the "renderer" receives from the renderer one or more coordinates, such as latitude and longitude or x and y coordinates, of a particular location in the terrain, and such software object at the same time also receives from the renderer data specifying the amount of detail per unit area corresponding to a level of resolution in the hierarchical structure of data blocks. providing the renderer with data corresponding to the one or more coordinates - data depicting the terrain a first data block which that is found at the one or more sets of coordinates received from the renderer. includes data local memory - a memory that is physically part of the local computer that is corresponding to the one performing the steps of the recited method. In the specification, the term cache memory or more coordinates, is used. "It is noted that the term cache memory is used herein generally to refer to any from a local memory; relatively small memory which can be accessed rapidly by processor 20 and is used to save data which is most likely to be used by the processor." '189 patent, col. 11:58-61. providing the renderer with a first data block which includes data corresponding to the one or more coordinates, from a local memory – a software object other than the "renderer" provides to the renderer a first data block depicting the terrain that is found at the one or more pairs of coordinates received from the renderer, the first data block provided in the first instance from a memory that is physically part of the local computer that is performing the steps of the recited method. downloading from a remote downloading - receiving and storing data. server one or more remote server - a computer separate from the local computer that is performing additional data blocks at the steps of the recited method. a resolution level higher than the resolution level data corresponding to the one or more coordinates - data depicting the terrain of the first block which that is found at the pair of (e.g., latitude and longitude or x and y) coordinates received

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Claim include data	from the "renderer."
corresponding to the one or more coordinates if the provided block from the local memory is not at the indicated resolution level.	• downloading from a remote server one or more additional data blocks at a resolution level higher than the resolution level of the first block which include data corresponding to the one or more coordinates if the provided block from the local memory is not at the indicated resolution level—downloading to the local computer from a separate computer one or more additional data blocks each having an amount of detail per unit area greater than the amount of detail per unit area of the first data block already in the local memory, which additional data blocks include data corresponding to the one or more coordinates received from the "renderer," upon determination of the condition that the first data block already in the local memory is not at the indicated amount of detail per unit area received from the renderer.
2. A method according to	downloading the blocks from a succession of resolution levels – downloading
claim I, wherein downloading the one or	blocks in order of resolution level.
more additional data blocks	"When the rendering program requires a block including a new point or area for display,
comprises downloading the	the cache manager first requests the block of the lowest resolution level which covers the area with the least detail and then requests subsequent blocks with successively increasing
blocks from a succession of	detail, until the block with the level of detail required by the rendering program is sent."
resolution levels, from the level immediately higher	Col. 3:65-4;4.
than the resolution level of	level immediately higher than the resolution level of the first block – the next
the first block up to the	level of the resolution level hierarchy that has an amount of detail per unit area greater
maximal existent resolution	than the amount of detail per unit area of the first block.
level on the server not above the indicated resolution	 maximal existent resolution level on the server – the resolution level stored on
level.	the remote server that has the greatest amount of detail per unit area.
:	
3. A method of providing	terrain – same construction of this term as in claim 1.
data blocks describing three- dimensional terrain to a	data block—same construction of this term as in claim 1.
renderer, the data blocks belonging to a hierarchical	data blocks belonging to a hierarchical structure—same construction of this term as in claim 1.
structure which includes	
blocks at a plurality of different resolution levels,	resolution level— same construction of this term as in claim 1.
the method comprising:	
receiving from the renderer	renderer- same construction of this term as in claim 1.
a plurality of coordinates in the terrain along with	 coordinates in the terrain-same construction of this term as in claim 1.
indication of a respective	indication of a respective resolution level—same construction of this term as in
resolution level; said plurality of coordinates	claim I.
being included in a	receiving from the renderer a plurality of coordinates in the terrain along with
plurality of respective distinct blocks;	indication of a respective resolution level — a software object other than the "renderer" receives from the renderer two or more sets of coordinates, such as latitude and longitude or x and y coordinates, of a particular location in the terrain, and such software object at the same time also receives from the renderer data specifying, for each respective set of coordinates, the amount of detail per unit area corresponding to a level of resolution in the hierarchical structure of data blocks.
	 plurality of coordinates being included in a plurality of respective distinct blocks – each set of multiple sets of coordinates are in a respective set of multiple

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" Claim	Proper Construction
,	blocks corresponding to that set of coordinates.
providing the renderer with first data block which includes data corresponding to at least some of the plurality of coordinates from a local memory;	 data corresponding to at least some of the plurality of coordinates – data depicting the terrain that is found at one or more of the sets of the coordinates received from the renderer. local memory— same construction of this term as in claim 1. providing the renderer with a first data block which includes data corresponding to at least some of the plurality of coordinates from a local memory – a software object other than the "renderer" provides to the renderer a first data block depicting the terrain that is found at one or more of the sets of the coordinates received from the renderer, the first data block provided in the first instance from a memory that is physically part of the local computer that is performing the steps of the recited method.
downloading from a remote	downloading- same construction of this term as in claim 1.
server one or more additional blocks which	 remote server—same construction of this term as in claim 1.
include data corresponding to a plurality of respective	data corresponding to a plurality of respective distinct blocks — data depicting the terrain that is found at a common set of coordinates included in a respective set of multiple blocks corresponding to that set of coordinates.
distinct blocks if the provided block from the local memory is not at the indicated resolution level, wherein blocks of lower resolution levels are downloaded before blocks of higher resolution levels.	 downloading from a remote server one or more additional data blocks which include data corresponding to a plurality of respective distinct blocks if the provided block from the local memory is not at the indicated resolution level—downloading to the local computer from a separate computer one or more additional data blocks each having data corresponding to the one or more coordinates received from the "renderer," upon determination of the condition that the first data block already in the local memory is not at the indicated amount of detail per unit area received from the renderer. wherein blocks of lower resolution levels are downloaded before blocks of
	higher resolution levels - data blocks depicting a lesser amount of detail per unit area are downloaded before data blocks depicting a greater amount of detail per unit area are downloaded.
,	
4. A method of providing	terrain—same construction of this term as in claim 1.
data blocks describing three- dimensional terrain to a	 data block—same construction of this term as in claim 1.
renderer, the data blocks belonging to a hierarchical structure which includes	data blocks belonging to a hierarchical structure—same construction of this term as in claim 1.
blocks at a plurality of different resolution levels, the method comprising:	• resolution level— same construction of this term as in claim 1.
receiving from the renderer	renderer-same construction of this term as in claim 1.
a plurality of coordinates in the terrain along with	coordinates in the terrain-same construction of this term as in claim 1.
indication of a respective resolution level; said plurality of coordinates	indication of a respective resolution level—same construction of this term as in claim 1.
being included in a plurality of respective distinct blocks;	 receiving from the renderer a plurality of coordinates in the terrain along with indication of a respective resolution level—same construction of this term as in claim 3.

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, Claim	Proper Construction
	plurality of coordinates being included in a plurality of respective distinct blocks—same construction of this term as in claim 3.
providing the renderer with first data block which includes data	 data corresponding to at least some of the plurality of coordinates—same construction of this term as in claim 3.
corresponding to at least	 local memory—same construction of this term as in claim 1.
some of the plurality of coordinates from a local memory;	 providing the renderer with a first data block which includes data corresponding to at least some of the plurality of coordinates from a local memory— same construction of this term as in claim 3.
downloading from a remote	downloading—same construction of this term as in claim 1.
server one or more additional blocks which	 remote server—same construction of this term as in claim 1.
include data corresponding to a	 data corresponding to a plurality of respective distinct blocks—same construction of this term as in claim 3.
plurality of respective distinct blocks if the provided block from the local memory is not at the indicated resolution	 downloading from a remote server one or more additional data blocks which include data corresponding to a plurality of respective distinct blocks if the provided block from the local memory is not at the indicated resolution level—same construction of this term as in claim 3.
level, wherein of lower resolution levels are downloaded before blocks of higher resolution levels and the block for which the	 wherein of lower resolution levels are downloaded before blocks of higher resolution levels— This claim uses the term "wherein of lower resolution levels", which is nonsensical. To the extent that the patentee intended to refer to "wherein blocks of lower resolution levels", however, Keyhole construes this term as this term was construed in claim 3.
coordinates were provided last among blocks at a common resolution level is downloaded first.	• the block for which the coordinates were provided last among blocks at a common resolution level is downloaded first—if the renderer provides one set of coordinates followed by another set of coordinates and the two sets of coordinates are included in different blocks of the same resolution level (i.e., containing the same amount of detail per unit area) the block corresponding to the most recently provided set of coordinates is downloaded before the block corresponding to the set of coordinates that the renderer provided first is downloaded.
	"Preferably, when the processor requires a number of blocks, the first block sent is the block of the lowest level. If two blocks of the same level are required, the one which is requested last is sent first. Thus, when the viewpoint changes, the blocks sent first are for the new viewpoint, and only afterwards are blocks sent for the old viewpoint." Col. 3:41-46.
5. A method of providing	terrain—same construction of this term as in claim 1.
data blocks describing three- dimensional terrain to a	 data block—same construction of this term as in claim 1.
renderer, the data blocks	data blocks belonging to a hierarchical structure-same construction of this
belonging to a hierarchical structure which includes	term as in claim 1.
blocks at a plurality of different resolution levels,	• resolution level—same construction of this term as in claim 1.
the method comprising: receiving from the renderer	renderer—same construction of this term as in claim 1.
a plurality of coordinates	• coordinates in the terrain—same construction of this term as in claim 1.
in the terrain along with indication of a respective	indication of a respective resolution level—same construction of this term as in claim
resolution level; said	- materials of a respective resolution level— sum o construction of this term as in claim

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Claim	Proper Construction
plurality of coordinates being included in a plurality of respective distinct blocks;	1. receiving from the renderer a plurality of coordinates in the terrain along with indication of a respective resolution level—same construction of this term as in claim 3. plurality of coordinates being included in a plurality of respective distinct blocks—
	same construction of this term as in claim 3.
providing the renderer with first data block which includes data corresponding to at least some of the plurality of coordinates from a local memory;	 data corresponding to at least some of the plurality of coordinates—same construction of this term as in claim 3. local memory—same construction of this term as in claim 1. providing the renderer with a first data block which includes data corresponding to at least some of the plurality of coordinates from a local memory—same construction of this term as in claim 3.
downloading from a remote	downloading—same construction of this term as in claim 1.
server one or more additional blocks which	remote server—same construction of this term as in claim 1.
include data corresponding to a plurality of respective	 data corresponding to a plurality of respective distinct blocks—same construction of this term as in claim 3.
plurality of respective distinct blocks if the provided block from the local memory is not at the indicated resolution level; wherein the blocks	 downloading from a remote server one or more additional data blocks which include data corresponding to a plurality of respective distinct blocks if the provided block from the local memory is not at the indicated resolution level— same construction of this term as in claim 3.
are downloaded according to the order in which the coordinates were provided.	 the blocks are downloaded according to the order in which the coordinates were provided—the blocks corresponding to the provided coordinates are downloaded in the order that the coordinates were provided by the renderer.
6. A method according to claim 5, wherein downloading the blocks comprises downloading first the block for which the coordinates were provided last.	 downloading first the block for which the coordinates were provided last— downloading first the block corresponding to the coordinates that were most recently provided by the renderer.
7. A method of providing	terrain—same construction of this term as in claim 1.
data blocks describing three- dimensional terrain to a	 data block—same construction of this term as in claim 1.
renderer, the data blocks belonging to a hierarchical	 data blocks belonging to a hierarchical structure—same construction of this term as in claim 1.
structure which includes blocks at a plurality of different resolution levels, the method comprising:	• resolution level— same construction of this term as in claim 1.
receiving from the renderer	renderer—same construction of this term as in claim 1,
one or more coordinates in the terrain along with	• coordinates in the terrain—same construction of this term as in claim 1.
indication of a respective	• indication of a respective resolution level-same construction of this term as in claim

resolution level;

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Claim	Proper Construction
<u>Catta</u>	l.
	 receiving from the renderer a one or more coordinates in the terrain along with indication of a respective resolution level— same construction of this term as in claim I.
providing the renderer with a first data block which includes data corresponding to the one or more coordinates, from a local memory; downloading from a	 data corresponding to the one or more coordinates—same construction of this term as in claim 1. local memory—same construction of this term as in claim 1. providing the renderer with a first data block which includes data corresponding to at least some of the plurality of coordinates, from a local memory—same construction of this term as in claim 3. downloading—same construction of this term as in claim 1.
remoter server one or more additional data blocks which include data corresponding to the	 remoter server— This claim uses the term "remoter server", which is nonsensical. To the extent that the patentee intended to refer to a "remote server", however, Keyhole construes this term as this term was construed in claim 1.
one or more coordinates if the provided block from the local memory is not at the indicated resolution level;	• downloading from a remoter server one or more additional data blocks which include data corresponding to the one or more coordinates if the provided block from the local memory is not at the indicated resolution level—downloading to the local computer from a separate computer one or more additional data blocks, which additional data blocks include data corresponding to the one or more coordinates received from the "renderer," upon determination of the condition that the first data block already in the local memory is not at the indicated amount of detail per unit area received from the renderer.
and downloading from a remote server excess	 excess blocks not currently needed by the renderer—blocks other than the blocks corresponding to coordinates provided by the renderer.
blocks not currently needed by the renderer to fill up the local memory when not downloading blocks required by the renderer.	"Preferably, renderer 72 determines the exact blocks needed and calls for them using their (x,y) coordinates and their resolution level 44. Alternatively or additionally, renderer 72 specifies, for each resolution level 44, the coordinates of the boundaries of the necessary areas, and cache manager 74 determines the identities of the required blocks 42. Preferably, when only a small part of a block 42 is required, cache manager 74 orders only the required sub-blocks 43 in order to save transmission time. On the average, rendering a view image requires between about 20 and 200 sub-blocks 43 of various resolution levels 44." Col. 14:10-20.
	"If renderer 72 needs the downloaded block (i.e., it was not ordered solely to fill cache memory 32, as described herein below), it is passed to the renderer, as indicated by block 124." Col. 15:47-50.
	 fill up the local memory—blocks are added to local memory until local memory is full.
	"Preferably, when connections 76 are not in use bringing blocks 42 required by renderer 72, cache manager 74 downloads blocks in the area of the viewpoint to fill cache memory 32. Preferably, cache manager 74 attempts to fill cache memory 32 with a sufficient number of blocks, such that for any view direction of the current viewpoint, all blocks 42 required by renderer 72 are stored in cache memory 32." Col. 12:16-20.
	"Preferably, when open cache memory 34 is full, a least recently used (LRU) method is used to determine which sub-block 43 is to be discarded to make room for a new sub-block. A preferred LRU method is described in the above-mentioned Ser. No. 08/939,948 patent application. Alternatively or additionally, any other suitable

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Claim	Proper Construction
	method of memory management may be used to manage cache memory 32 and/or open cache memory 34." Col. 12:50-57.
	 When not downloading blocks required by the renderer—during periods of time when the local computer is not downloading blocks corresponding to coordinates provided by the renderer.
	 downloading from a remote server excess blocks not currently needed by the renderer to fill up the local memory when not downloading blocks required by the renderer—downloading to the local computer from a separate computer one or more additional data blocks, which additional data blocks are other than the blocks corresponding to coordinates provided by the renderer, until local memory is full, during periods of time when the local computer is not downloading blocks corresponding to coordinates provided by the renderer.
8. A method according to claim 7, wherein downloading the data blocks comprised downloading the blocks via the Internet.	downloading—same construction of this term as in claim 1
,	
9. A method according to claim 7, wherein the renderer renders a view from a current viewpoint, and	 renderer—same construction of this term as in claim 1. renders a view—displays an image of terrain. filling the local memory – blocks are added to local memory until local memory is
wherein downloading the excess blocks comprises filling the local memory with substantially all of the blocks surrounding a point in the terrain seen from the current viewpoint within a predetermined distance range.	 filling the local memory with substantially all of the blocks surrounding a point in the terrain seen from the current viewpoint within a predetermined distance range—substantially all the blocks on all sides out to an established distance boundary around a point in the terrain that is seen from the current viewpoint are added to local memory until local memory is filled.
•	
10. A method according to claim 9, wherein downloading excess blocks comprises filling the local memory with substantially the same number of blocks from each different resolution level.	filling the local memory—same construction of this term as in claim 9.
11. A method according to claim 9, wherein filling the local memory comprises filling the memory with substantially all the blocks within the range from a lower resolution level before downloading blocks of higher resolution levels.	filling the local memory—same construction of this term as in claim 9.

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en:	
<u>Claim</u>	Proper Construction
12. Apparatus for providing data blocks describing three-dimensional terrain to a	This claim uses the term "render" rather than "renderer," which is nonsensical. To the extent that the patentee intended to refer to a "renderer," however, Keyhole provides the following construction.
render, the data blocks belonging to a hierarchical	• terrain – same construction of this term as in claim 1.
structure which includes	data block same construction of this term as in claim I.
blocks at a plurality of different resolution levels, the apparatus comprising:	 data blocks belonging to a hierarchical structure – same construction of this term as in claim 1.
	 resolution level – same construction of this term as in claim 1.
a local memory which	local memory – same construction of this term as in claim 1.
stores data blocks corresponding to	data blocks same construction of this term as in claim 1.
coordinates proximal to a current viewpoint of the	 data blocks corresponding to coordinates – data depicting the terrain that is found at coordinates.
renderer;	 proximal to a current viewpoint of the renderer – near to the current viewpoint of the "renderer."
	 a local memory which stores data blocks corresponding to coordinates proximal to a current viewpoint of the renderer - a memory that is physically part of the local computer which stores data blocks that depict the terrain that is found at (e.g., latitude and longitude or x, y) coordinates located near the current viewpoint of the renderer.
a communication link, through which the	 communication link – network connection used for transferring data between computers. E.g. '189 patent, col. 12:8-12; Fig. 5.
memory receives the data blocks from a remote server;	"Preferably, processor 20 establishes one or more communication connections 76 with server 26 through which blocks 42 are sent to the processor. Connections 76 are preferably standard TCP connections as are known in the art, although any other protocol may be used to form the connection." Col. 12:8-12.
	remote server - Same construction of this term as in claim 1.
	 a communication link, through which the memory receives the data blocks from a remote server — a network connection used for transferring the "data blocks" to the local memory that is physically part of the local computer, from a separate computer.
a processor which receives one or more specified coordinates along with indication of a respective resolution level from a renderer, provides the renderer with a first data block which includes data corresponding to the one or more specified coordinates from a local	 processor — a general purpose processor of the local computer as distinguished from the dedicated hardware processor that runs the "renderer."
	• renderer – in the apparatus claims, a dedicated hardware processor that runs a "renderer," where "renderer" has the same construction as in claim 1 ("hardware renderer"). The hardware renderer is separate from the "processor" such that the processor can receive data from the renderer and provide data to the renderer. "Renderer 72 is preferably implemented entirely in software. Alternatively, renderer 72 includes a dedicated hardware processor, such as a 3D graphic accelerator, along with a software package running on general purpose processor 20 which provides blocks 42 to the dedicated hardware processor." Col. 13:11-17.
memory, and downloads over the communication link one or more data blocks of a resolution level higher than the	 receives one or more specified coordinates along with indication of a respective resolution level from a renderer – receives from a hardware renderer one or more specified coordinates in the terrain and at the same times receives from the hardware renderer data specifying the amount of detail per unit area corresponding to a level of

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Claim	Proper-Construction
resolution level of the first block which include data corresponding to the one or more coordinates if the first block is not from the indicated level.	 resolution in the hierarchical structure of data blocks. provides the renderer with a first data block which includes data corresponding to the one or more specified coordinates from a local memory – provides to the hardware renderer a first data block depicting the terrain that is found at the one or more sets of specified coordinates, said first data block provided in the first instance from a "local memory." downloads over the communication link one or more data blocks of a resolution level higher than the resolution level of the first block which include data corresponding to the one or more coordinates if the first block is not from the indicated level – downloads over the communication link one or more data blocks each having an amount of detail per unit area greater than the amount of detail per unit area of the first data block previously provided to the hardware renderer, which additional data blocks include data corresponding to the one or more coordinates received from the hardware renderer, upon determination of the condition that the previously provided first data block is not at the indicated amount of detail per unit area received from the hardware renderer.
I3. Apparatus for providing data blocks describing three-dimensional terrain to a render, the data blocks belonging to a hierarchical structure which includes blocks at a plurality of different resolution levels, the apparatus comprising:	 This claim uses the term "render" rather than "renderer," which is nonsensical. To the extent that the patentee intended to refer to a "renderer," however, Keyhole provides the following construction. terrain - same construction of this term as in claim 1. data block - same construction of this term as in claim 1. data blocks belonging to a hierarchical structure - same construction of this term as in claim 1. resolution level - same construction of this term as in claim 1. local memory - same construction of this term as in claim 1.
stores data blocks corresponding to coordinates proximal to a current viewpoint of the renderer;	 data blocks - same construction of this term as in claim 1. data blocks corresponding to coordinates - same construction of this term as in claim 12. proximal to a current viewpoint of the renderer - same construction of this term as in claim 12. a local memory which stores data blocks corresponding to coordinates proximal to a current viewpoint of the renderer - same construction of this term as in claim 12.
a communication link, through which the memory receives the data blocks from a remote server;	 communication link – same construction of this term as in claim 12. remote server – same construction of this term as in claim 1. a communication link, through which the memory receives the data blocks from a remote server – same construction of this term as in claim 12.
a processor which receives one or more specified coordinates along with indication of a respective resolution level from a renderer, provides the renderer with a first data	 processor - same construction as in claim 12. renderer - same construction as in claim 12. receives one or more specified coordinates along with indication of a respective resolution level from a renderer - same construction as in claim 12. provides the renderer with a first data block which includes data

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Claim	Proper Construction
block which includes	corresponding to the one or more specified coordinates from a local memory —
data corresponding to the	same construction as in claim 12.
one or more specified coordinates from a local memory, and downloads over the communication link blocks from the resolution level of the first block up to a maximal resolution level of blocks stored on the server that is not above the indicated resolution level which include data corresponding to the one or more coordinates if the first block is not from	downloads over the communication link blocks from the resolution level of the first block up to a maximal resolution level of blocks stored on the server that is not above the indicated resolution level which include data corresponding to the one or more coordinates if the first block is not from the indicated level—downloads over the communication link data blocks, each block having a resolution level equal to or greater than the resolution level of the first data block previously provided to the hardware renderer but not exceeding the highest resolution level stored on the remote server nor the resolution level indicated by the hardware renderer, each additional data block including data corresponding to the one or more coordinates received from the hardware renderer, upon determination of the condition that the previously provided first data block is not at the indicated amount of detail per unit area received from the hardware renderer.
the indicated level.	
14. Apparatus for providing data blocks describing three-dimensional terrain to a	 This claim uses the term "render" rather than "renderer," which is nonsensical. To the extent that the patentee intended to refer to a "renderer," however, Keyhole provides the following construction.
render, the data blocks belonging to a hierarchical	This claim uses the term "one or coordinates" rather than "one or more
structure which includes	coordinates," which makes this term nonsensical. To the extent that the patentee intended to refer to "one or more coordinates", however, Keyhole provides the
blocks at a plurality of different resolution levels,	following construction.
the apparatus comprising:	 terrain – same construction of this term as in claim 1.
	 data block – same construction of this term as in claim 1.
	 data blocks belonging to a hierarchical structure – same construction of this term as in claim 1.
	 resolution level – same construction of this term as in claim 1.
a local memory which	local memory – same construction of this term as in claim 1.
stores data blocks corresponding to	 data blocks – same construction of this term as in claim 1.
coordinates proximal to a current viewpoint of the renderer;	 data blocks corresponding to coordinates – same construction of this term as in claim 12.
	 proximal to a current viewpoint of the renderer – same construction of this term as in claim 12.
	 a local memory which stores data blocks corresponding to coordinates proximal to a current viewpoint of the renderer – same construction of this term as in claim 12.
a communication link, through which the memory receives the data blocks from a remote server;	• communication link – same construction of this term as in claim 12.
	 remote server – same construction of this term as in claim 1.
	 a communication link, through which the memory receives the data blocks from a remote server – same construction of this term as in claim 12.
a processor which receives	processor – same construction as in claim 12.
one or more specified coordinates along with	• renderer – same construction as in claim 12.

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Claim	Proper Construction
indication of a respective resolution level from a renderer, provides the renderer with a first data block which includes data corresponding to the one or more specified coordinates from a local memory, and downloads over the communication link blocks of lower resolution levels before blocks of higher resolution levels which include data corresponding to the one or coordinates if the first block is not from the indicated level.	 receives one or more specified coordinates along with indication of a respective resolution level from a renderer – same construction as in claim 12. provides the renderer with a first data block which includes data corresponding to the one or more specified coordinates from a local memory – same construction as in claim 12. downloads over the communication link blocks of lower resolution levels before blocks of higher resolution levels which include data corresponding to the one or coordinates if the first block is not from the indicated level—downloads over the communication link one or more additional data blocks depicting a lesser amount of detail per unit area before downloading data blocks depicting a greater amount of detail per unit area, which additional data blocks include data corresponding to the one or more coordinates received from the hardware renderer, upon determination of the condition that the previously provided first data block is not at the indicated amount of detail per unit area received from the hardware renderer.
15. Apparatus for providing	This claim uses the term "render" rather than "renderer," which is nonsensical. To the
data blocks describing three- dimensional terrain to a render, the data blocks belonging to a hierarchical structure which includes blocks at a plurality of different resolution levels, the apparatus comprising: a local memory which stores data blocks	 extent that the patentee intended to refer to a "renderer," however, Keyhole provides the following construction. This claim uses the term "one or coordinates" rather than "one or more coordinates," which makes this term nonsensical. To the extent that the patentee intended to refer to "one or more coordinates", however, Keyhole provides the following construction. terrain – same construction of this term as in claim 1. data block – same construction of this term as in claim 1. data blocks belonging to a hierarchical structure – same construction of this term as in claim 1. resolution level – same construction of this term as in claim 1. local memory – same construction of this term as in claim 1. data blocks – same construction of this term as in claim 1.
corresponding to coordinates proximal to a current viewpoint of the renderer;	 data blocks corresponding to coordinates - same construction of this term as in claim 12. proximal to a current viewpoint of the renderer - same construction of this term as in claim 12. a local memory which stores data blocks corresponding to coordinates proximal to a current viewpoint of the renderer - same construction of this term as in claim 12.
a communication link, through which the memory receives the data blocks from a remote server;	 communication link – same construction of this term as in claim 12. remote server – same construction of this term as in claim 1. a communication link, through which the memory receives the data blocks from a remote server – same construction of this term as in claim 12.
a processor which receives one or more specified coordinates along with	 processor – same construction as in claim 12. renderer – same construction as in claim 12.

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Proper Construction Claim indication of a respective receives one or more specified coordinates along with indication of a respective resolution level from a resolution level from a renderer - same construction as in claim 12. renderer, provides the provides the renderer with a first data block which includes data corresponding to renderer with a first data the one or more specified coordinates from a local memory - same construction as in block which includes claim 12. data corresponding to the one or more specified downloads over the communication link blocks which include data corresponding coordinates from a local to the one or coordinates if the first block is not from the indicated level, wherein memory, and downloads the processor downloads blocks of lower resolution levels before blocks of higher over the communication resolution levels and the block for which the coordinates were provided last among link blocks which blocks from a common resolution level is downloaded first-downloads over the include data communication link one or more additional data blocks which include data corresponding to the one corresponding to the one or more coordinates received from the hardware renderer. or coordinates if the first upon determination of the condition that the previously provided first data block is not block is not from the at the indicated amount of detail per unit area received from the hardware renderer; indicated level, wherein wherein the processor downloads additional data blocks depicting a lesser amount of the processor downloads detail per unit area before downloading data blocks depicting a greater amount of detail blocks of lower per unit area, and among the blocks of equal amount of detail per unit area, the block for resolution levels before which the hardware renderer most recently provided coordinates is downloaded first. blocks of higher resolution levels and the block for which the coordinates were provided last among blocks from a common resolution level is downloaded first. 16. Apparatus for providing . This claim uses the term "render" rather than "renderer," which is nonsensical. To the extent that the patentee intended to refer to a "renderer," however, Keyhole provides the data blocks describing threedimensional terrain to a following construction. render, the data blocks • terrain - same construction of this term as in claim 1. belonging to a hierarchical structure which includes data block - same construction of this term as in claim 1. blocks at a plurality of data blocks belonging to a hierarchical structure - same construction of this term as different resolution levels. in claim I. the apparatus comprising: resolution level – same construction of this term as in claim 1. a local memory which local memory - same construction of this term as in claim 1. stores data blocks data blocks - same construction of this term as in claim 1. corresponding to coordinates proximal to a data blocks corresponding to coordinates – same construction of this term as in claim current viewpoint of the renderer; proximal to a current viewpoint of the renderer - same construction of this term as in claim 12. a local memory which stores data blocks corresponding to coordinates proximal to a current viewpoint of the renderer - same construction of this term as in claim 12. a communication link, communication link - same construction of this term as in claim 12. through which the remote server - same construction of this term as in claim 1. memory receives the data blocks from a remote a communication link, through which the memory receives the data blocks from a

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<u>Claim</u>	Proper Construction
server;	remote server - same construction of this term as in claim 12.
a processor which receives one or more specified coordinates along with indication of a respective resolution level from a renderer, provides the renderer with a first data block which includes data corresponding to the one or more specified coordinates from a local memory, and downloads over the communication link one or more additional blocks according to the order in which the coordinates were provided which include data corresponding to the one or more coordinates if the first block is not from	 processor – same construction as in claim 12. renderer – same construction as in claim 12. receives one or more specified coordinates along with indication of a respective resolution level from a renderer – same construction as in claim 12. provides the renderer with a first data block which includes data corresponding to the one or more specified coordinates from a local memory – same construction as in claim 12. downloads over the communication link one or more additional blocks according to the order in which the coordinates were provided which include data corresponding to the one or more coordinates if the first block is not from the indicated level. – downloads over the communication link one or more additional data blocks, data blocks which include data corresponding to the one or more coordinates received from the hardware renderer, in the same order that the coordinates were provided by the hardware renderer, upon determination of the condition that the previously provided first data block is not at the indicated amount of detail per unit area received from the hardware renderer.
the indicated level.	
17. Apparatus according to claim 16, wherein the processor downloads in first precedence the block for which the coordinates were provided last.	 processor – same construction as in claim 12. downloads in first precedence the block for which the coordinates were provided last—downloads first the block corresponding to the coordinates that were most recently provided by the hardware renderer.
18. Apparatus for providing data blocks describing three-dimensional terrain to a render, the data blocks belonging to a hierarchical structure which includes blocks at a plurality of different resolution levels, the apparatus comprising:	 This claim uses the term "render" rather than "renderer," which is nonsensical. To the extent that the patentee intended to refer to a "renderer," however, Keyhole provides the following construction. terrain – same construction of this term as in claim 1. data block – same construction of this term as in claim 1.
	 data blocks belonging to a hierarchical structure – same construction of this term as in claim 1.
•	resolution level – same construction of this term as in claim 1.
a local memory which stores data blocks corresponding to coordinates proximal to a current viewpoint of the renderer;	 local memory – same construction of this term as in claim 1. data blocks – same construction of this term as in claim 1. data blocks corresponding to coordinates – same construction of this term as in claim 12. proximal to a current viewpoint of the renderer – same construction of this term as in claim 12. a local memory which stores data blocks corresponding to coordinates proximal to

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Claim	Proper Construction
Claim .	a current viewpoint of the renderer – same construction of this term as in claim 12.
a communication link,	communication link – same construction of this term as in claim 12.
through which the memory receives the data	remote server — same construction of this term as in claim 1,
blocks from a remote server;	a communication link, through which the memory receives the data blocks from a remote server – same construction of this term as in claim 12.
a processor which receives one or more specified coordinates along with indication of a respective resolution level from a renderer, provides the renderer with a first data block which includes data corresponding to the one or more specified coordinates from a local	 processor – same construction as in claim 12. renderer – same construction as in claim 12. receives one or more specified coordinates along with indication of a respective resolution level from a renderer – same construction as in claim 12. provides the renderer with a first data block which includes data corresponding to the one or more specified coordinates from a local memory – same construction as in claim 12. downloads over the communication link blocks which include data corresponding to the one or coordinates if the first block is not from the indicated level – This
memory, downloads over the communication link blocks which include data corresponding to the one or coordinates if the first block is not from the indicated level; and	claim uses the term "one or coordinates" rather than "one or more coordinates", which is nonsensical. To the extent that the patentee intended to refer to "one or more coordinates" however, Keyhole provides the following construction: —downloads over the communication link one or more additional data blocks, the data blocks which include data corresponding to the one or more coordinates received from the hardware renderer, upon determination of the condition that the previously provided first data block is not at the indicated amount of detail per unit area received from the hardware renderer.
downloads excess blocks not currently needed by the renderer to fill up the local memory when the processor is not downloading blocks required by the renderer.	 downloads excess blocks not currently needed by the renderer to fill up the local memory when the processor is not downloading blocks required by the renderer— downloads blocks other than the blocks corresponding to coordinates provided by the renderer, until local memory is full, during periods of time when the processor is not downloading blocks corresponding to coordinates provided by the hardware renderer.
19. Apparatus according to	renderer—same construction of this term as in claim 12.
claim 18, wherein the renderer renders a view from	 renders a view—same construction of this term as in claim 9.
a current viewpoint and the processor fills the local memory with substantially all the blocks surrounding a point in the terrain seen from the current viewpoint in a predetermined range.	fills the local memory – blocks are added to local memory until local memory is filled.
	in a predetermined range—inside of an area that has been established in advance and defined by the distance from some point in the terrain to an established distance boundary. The processor fills the local memory with substantially all the blocks suggested.
	 the processor fills the local memory with substantially all the blocks surrounding a point in the terrain seen from the current viewpoint in a predetermined range— substantially all the blocks on all sides out to an established distance boundary around a point in the terrain that is seen from the current viewpoint are added by the processor to local memory until local memory is filled.
20. Apparatus according to claim 19, wherein the processor fills the local	fills the local memory—same construction of this term as in claim 19.

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Claim	Proper Construction
memory with substantially the same number of blocks from each resolution level.	
21. Apparatus according to claim 19, wherein the processor fills the local memory with substantially all the blocks from a lower level before downloading blocks of higher resolution levels.	 fills the local memory—same construction of this term as in claim 19. fills the local memory with substantially all the blocks from a lower level before downloading blocks of higher resolution levels—substantially all of the blocks from a resolution level depicting a lesser amount of detail per unit area are added to local memory before downloading data blocks depicting greater amounts of detail per unit area.
22. Apparatus according to claim 18, wherein the communication link comprises a connection to the internet.	 connection to the internet—network connection used for transferring data between computers that links to a collection of interconnected computer networks that use TCP/IP protocols to communicate.
,	
23. The method of claim 7, wherein the coordinates relate to the coordinates of a predetermined course of a flight vehicle.	 course of a flight vehicle—the path or route of a flying vehicle, such as a virtual airplane. "It is another object of some aspects of the present invention to provide methods and apparatus for training a pilot to fly a preplanned flight course while allowing the pilot to see the view seen at any point along the flight course at substantially any desired angle." Col. 2:1-5. "In preferred embodiments of the present invention, a processor simulates flight of a virtual airplane along a selected route." Col. 2:15-17. coordinates of a predetermined course of a flight vehicle—coordinates describing a preset path or route of a flying vehicle. relate to the coordinates of a predetermined course of a flight vehicle—are associated with the coordinates describing a preset path or route of a flying vehicle.
	course of a flight vehicle—same construction of this term as in claim 23.
24. The apparatus of claim 18, wherein said data blocks relate to a course of a flight vehicle.	 course of a flight vehicle—same construction of this term as in claim 23. relate to a course of a flight vehicle—are associated with the path of a flying vehicle.

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Respectfully submitted,

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CERTIFICATE OF SERVICE

I hereby certify that on this day a true copy of the above document was served upon the attorney of record for each party by

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